

Use this formula:

$$\text{Density} = \frac{\text{mass}}{\text{volume}} = \text{g/cm}^3$$

Steps used to solve the problem:

1. Write the formula: $D = \frac{M}{V}$
2. Substitute the numbers into the formula: $D = \frac{100 \text{ grams}}{500 \text{ cm}^3}$
3. Solve: $D = 0.2 \text{ g/cm}^3$

Density Problems:

1. If the volume of the **water** in the soda bottle is $2,000 \text{ cm}^3$ and the mass is 2,000 grams, what is the density of the **water** in the bottle?

1. Write the formula: m/v

2. Substitute the numbers into the formula: $D = \frac{2000}{2000}$

3. Solve: $D = \frac{2000}{2000} = 1$

2. If the volume of the **cotton** in the soda bottle is $2,000 \text{ cm}^3$ and the mass is 50 grams, what is the density of the **cotton** in the bottle?

1. Write the formula: m/v

2. Substitute the numbers into the formula: $D = \frac{50}{2000}$

3. Solve: $D = \frac{50}{2000} = 0.025$

3. If the volume of the **iron filings** in the soda bottle is $2,000 \text{ cm}^3$ and the mass is 15,720 grams, what is the density of the **iron filings** in the bottle?

1. Write the formula: m/v

2. Substitute the numbers into the formula: $D = \frac{15720}{2000}$

3. Solve: $D = 7.86$